Agricultural Adaptation Council (CanAdapt Program).

archived at: http://www.ansc.purdue.edu/courses/ansc481/animal_net.html

COMMENT ON SUBTHERAPEUTIC USE OF ANTIBIOTICS IN ANIMAL AGRICULTURE BY THE
COUNCIL FOR AGRICULTURAL SCIENCE AND TECHNOLOGY, AMES, IOWA
April 6, 1999
Council for Agricultural Science and Technology
www.cast-science.org
The Council of Agricultural Science and Technology (CAST) is a nonprofit
organization composed of 37 scientific societies and many individual,
student, company, nonprofit, and associate society members. The mission of
CAST is to identify food and fiber, environmental, and other agricultural
issues and to interpret related scientific research information for
legislators, regulators, and the media for use in public policy decision
making. Dr. Donald C. Beitz, professor, Departments of Animal Science and
Biochemistry, Biophysics, and Molecular Biology, Iowa State University,
prepared this response to the document entitled "A Proposed Framework for
Evaluating and Assuring the Human Safety of the Microbial Effects of
Antimicrobial New Animal Drugs Intended for Use in Food-Producing
Animals."
There is no docket number for this document.
Antibiotics are used widely throughout animal agriculture as therapeutic
agents to treat bacterial infections that lead to losses in productivity
and to animal discomfort. In addition, subtherapeutic doses of antibiotics
are
used to prevent or decrease the incidence of bacterial diseases and to
cause improvements in productivity of food-producing animals. Many of the
antibiotics used in animal agriculture also are used for treatment of
human bacterial infections. Their use in animal agriculture has come under
increased scrutiny because of concern over development of mutant microbes
having resistance to usual microbicidal effects of antibiotics. Much of

the antibiotic usage in the United States is for humans. Most of the remainder
is used in food-producing animals and in pets.
Antibiotic resistance by pathogenic microorganisms is of major concern to
human and animal practitioners. Resistance to antibiotics develops when a
mutation occurs in microbial populations, which enables bacteria to survive in the presence of the antibiotic. The mutation may cause antibiotic
resistance by enabling bacteria to (1) decrease the ability of the antibiotic to penetrate the microbe, (2) increase the conversion of the antibiotic to noninhibitory forms, and (3) cause alterations in its metabolism, such as protein synthesis, so the antibiotic no longer inhibits a specific metabolic reaction. Logically, decreasing unnecessary
use of
antibiotics in hospitals, doctors' offices, and on farms seems prudent to
minimize the potential for development of antibiotic resistance.
Does the scientific evidence available today indicate that subtherapeutic
use of antibiotics for food-producing animals should be stopped? A 1999 study entitled The Use of Drugs in Food Animals: Benefits and Risks was prepared by the National Research Council (NRC) and published by the National Academy Press. The National Research Council-sponsored committee
concluded that the use of drugs in the food animal production industry is
not without some problems and concerns. On the basis of current scientific
information, however, the subtherapeutic use of antibiotics does not seem
to constitute an immediate public health concern. The committee indicated
that additional data might alter this conclusion.
The NRC committee generated three major recommendations:

1. The Center for Veterinary Medicine should establish integrated national databases to support "rational, visible, science-driven decision-making process and policy development for regulatory approval and
use of antibiotics in food animals."

2. Further development and use of antibiotics in human medicine and animal agriculture should be overseen by an interdisciplinary panel of scientists from the veterinary and animal health industry, human medicine community, consumer advocacy organizations, animal production industry, and research, epidemiology, and regulatory agencies.

3. Increased research should be conducted to study effects of nutrition and management on immune function and disease resistance of food-producing animals including additional research on new vaccines, antibody production, and genetic and molecular mechanisms of disease resistance. The goal of the additional research is to markedly decrease the amount of antibiotics required for treatment of infectious diseases through alternate non-drug techniques.

CAST agrees with the conclusions of the National Research Council committee.

We recognize the potential problems associated with therapeutic and subtherapeutic uses of antibiotics in animal agriculture. However, current data do not indicate antibiotic use in animal agriculture is the major culprit in increasing antibiotic resistance among microbial pathogens. We support the additional directed research recommended by the National Research Council committee. CAST recommends that action should not be taken to impose a wide-spread ban on subtherapeutic use of antibiotics in animal agriculture until more definitive information is available.

Dr. Donald C. Beitz
Department of Animal Science
Iowa State University
Ames, IA 50011
E-mail: cast@cast-science.org.
Web: www.cast-science.org.

FRESH VIRUS DEATHS IN MALAYSIA, ONE NEAR AIRPORT
April 6, 1999
Reuters
Benjamin Low

KUALA LUMPUR -- Malaysia, struggling with a viral epidemic that has killed 89 people, was cited as reporting Tuesday the first death from a pig-breeding area near the capital's airport as authorities reassured tourists the country was safe.

Officials were cited as saying two more people had died in a pig-breeding region in the worst-hit central state of Negeri Sembilan, where 73 people, mostly working or living on pig farms, have died.

Another two people were infected, bringing the number of viral